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COUNTY COUNCIL

Snohomish County, Washington



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W.T. _____ K.B. _____
D.F. _____ S.W. _____
G.L. _____ D.J. _____

ORDINANCE NO. 82-149

REGULATING RESIDENTIAL DENSITY ON STEEP SLOPES

WHEREAS, a Slope Policy has been adopted as a part of the county's comprehensive plan to uniformly guide development decisions in all sub-area comprehensive plans, and

WHEREAS, the adoption of this ordinance will implement the Slope Policy as applied to subdivisions and is in the best interest of the public health, safety and welfare.

NOW, THEREFORE, BE IT ORDAINED:

Section 1. The following new chapter is added to Title 18 of the Snohomish County Code:

Chapter 18.78
DEVELOPMENT ON STEEP SLOPES

Sections:

- 18.78.010 Purpose.
- 18.78.020 General Regulations.
- 18.78.030 Subdivision Regulations.

18.78.010 Purpose.

(1) The purpose of this chapter is to protect the health, safety and welfare of the citizenry and to guard the environment against unsafe and unnecessary degradation by implementing a policy regulating the development of certain sloping land.

(2) This chapter is enacted to achieve the following results:

A. To control development on steep slopes and landslide areas.

B. To achieve land use densities that are in conformity with the comprehensive plan, recognizing that the uniformity of these densities shall be modified by:

(1) Limiting development on steep slopes, and

(2) Permitting lot size averaging in order to achieve specific economic, energy, environmental and aesthetic objectives.

C. To allow land planning and development patterns which take into account the added costs and increased benefits of alternative designs for both the land owner and the County.

D. To encourage development on sloping areas that will retain or provide a desirable amount and

distribution of wooded land, so as to form an element of a viable open space system.

E. To assure the placement of dwellings, roads and utilities on sloped land so that the open space will coincide with areas of critical environmental concern and/or recreational opportunity.

F. To provide lots on which dwellings may be safely constructed and maintained by the homeowner.

G. To assure that developments on sloped lands demonstrate a concern for the view of the hills as well as the view from the hills.

H. To protect the citizens of the County from the hazards and risks of soils movement caused by construction, occupation and maintenance of development on certain sloping land only to the extent that these hazards and risks are in excess of those which would occur on lands of lesser slope.

I. To protect the citizens of the County by assured compliance with all applicable ordinances relating to storm water control, site grading, temporary and permanent control of erosion and sediment deposition.

18.78.020 General Regulations.

(1) The following principles and practices are to be employed in designing and reviewing all subdivision and/or development projects on steep terrain throughout unincorporated Snohomish County.

(A) In hazardous and potentially hazardous terrain, Snohomish County shall apply more stringent development standards than in areas where development constraints are absent. Requirements may include such provisions as special site design, structural standards, erosion control measures, clearing and grading plans, reduced densities or other measures necessary to protect life and property.

(B) Developments should "respect" natural processes rather than "overcome" natural constraints. In steeply sloped areas, developments shall limit surface modifications including clearing that would induce excessive erosion, undermine the support of nearby land, or unnecessarily scar the landscape. Where development necessitates vegetation removal, a reasonable amount of landscaping may be required to replace trees, shrubs, and ground cover removed during construction.

(C) Site disturbance shall be severely limited or prohibited in areas where landslides are likely. Development may be permitted where soil engineering studies indicate compatibility.

(D) Basic development approvals for required permits are to be received prior to the initiation

of land surface modifications. With few exceptions, a site design or building location plan will be required.

(E) Land surface modifications shall not induce changes in surface or subsurface drainage that would adversely impact lands in the affected drainage basin.

(F) Site restoration shall be required if land surface modifications violate adopted ordinances or policy or if construction does not ensue within a reasonable amount of time.

(G) Developers shall be accountable for the accuracy and validity of the environmental information submitted to the County.

18.78.030 Subdivision Regulations.

In addition to the requirements of Snohomish County Code Title 19, the following procedures and regulations shall apply to all subdivision activity:

(A) Determination of Slope.

The subdivider shall determine land slope and assess the applicability of this chapter. This information shall be provided to the Office of Community Planning along with the completed application. The Planning Director may call for engineering or other technical justification for any development in sloped areas if he or she determines that public health, safety, welfare or environment may be jeopardized by such development. The imposition of such requirements may be appealed as an Administrative Determination under Snohomish County Code 18.88.

The subdivider may use either or both of the following methods to determine land slope except that all subdivisions under Snohomish County Code Title 19 require use of method 2.:

1. Inquire at the Office of Community Planning for pre-existing slope information. Available information may be adequate for slope assessment in certain situations.

2. Obtain a topographic survey from a registered professional engineer or land surveyor which defines the slope of the property to a recognized and acceptable mapping standard. In all areas proposed for roads or dwellings, elevations of 90% of the area shall be within three (3) feet of the actual ground elevations.

(B) Determination of Potential Maximum Lot Density.

The subdivider shall use the Table Method to determine potential lot yield and the Table and/or Professional Planning Methods to determine minimum lot size.

1. Table Method: Use the method described in the following table.*

RESIDENTIAL DENSITY GUIDE FOR SLOPING LAND

Potential Lot Yield (dwelling units/gross acre)

Zoning **	Slopes ***				
	0-15%	16-20%	21-25%	26-35%	36%+
Rural Conservation/ Rural Diversification	.5	.5	.5	.5	.25
SA 1-Acre	1.0	1.0	1.0	1.0	.25
RR 20,000	1.8	1.8	1.8	1.8	.25
RR 12,500	2.8	2.8	2.8	1.8	.25
RR 9,600	4.0	4.0	2.8	1.8	.25
RR 8,400	4.2	4.0	2.8	1.8	.25
RR 7,200/WFB	4.8	4.0	2.8	1.8	.25

Minimum Lot Size
Underlying Zone or 6,000 SF 8,400 SF 20,000 SF 43,560 SF 100,000 SF

* An example is presented below.

** In areas zoned Rural Use, the potential lot yield in the category 0-15% slope will be based on the maximum density designated by the applicable comprehensive plan.

*** Slope shall be defined as the ratio of vertical rise over horizontal run, expressed as a percentage (also known as the tangent of the slope angle), i.e., 25% (14 deg.) equals 25 feet vertical distance (rise) for each 100 feet of horizontal distance (run) or 100 foot rise over 100 foot run equals 100 percent slope or 45 deg.

For the purpose of this table, continuous slopes with a horizontal run of less than 50 feet shall be considered level when 35 percent (19.3 deg.) or less.

2. Professional Planning Method. As an alternative to the table method described above, a subdivider may utilize

the services of licensed professionals who are experienced in land planning and engineering to determine potential minimum lot size. If this alternative is selected, the following requirements shall apply:

To support the requested lot size, the professional shall submit a report as set forth below which indicates that the proposed earthwork for the road and dwelling sites may be safely constructed and that each lot has sufficient area to provide location for the dwelling together with associated space for parking, yards and utilities. If, upon review of said engineering evidence and other relevant factors, the Planning Director is satisfied that the public health and safety can be maintained, he or she shall allow smaller lots than those set forth in the Table in certain steep slope situations.

The report shall generally address the following:

- a. surveyed cross sections of the property;
- b. grading and structure siting plans;
- c. clearing and landscaping plans;
- d. a description of groundwater levels throughout the area affected by grading for both summer and winter conditions;
- e. an evaluation of changes in groundwater conditions that would result from the project and the resulting effects, if any;
- f. a description of on-site and off-site storm water drainage, and recommendations for carrying the drainage to an established system;
- g. the depth of weathered or loosened soils on the site and the nature of the weathered and underlying basement soils;
- h. an evaluation of slope stability before, during and after construction;
- i. an evaluation of the effect of the project on surrounding properties including any limitations on subsequent development or grading on adjacent properties;

j. recommendations for site preparation, excavation procedures, fill placement and landscaping; and

k. recommendations for foundation support and later retention of earth.

3. Soils Subsections Report Required. Notwithstanding the provisions of 1 and 2 above, a soils report prepared by a professional engineer experienced in soil mechanics shall be required whenever any grading or construction is proposed on slopes 50% (2:1) or steeper. The soils report shall report the on-site conditions encountered and provide an evaluation of slope stability before, during and after construction.

The soils report may set forth conditions relating to the design and/or construction of the development which, unless otherwise waived by the County, shall be followed in the design and construction of the project.

Example: The following example utilized the Table Method for density calculation.

Step 1 - "Identify Sloped Areas and Calculate Potential Lot Yield": Areas of varying slope characteristics as defined in the slope table are to be identified on the property and displayed on the preliminary plat map through surveyed topographic lines and shading. Potential lot yield is to be consistent with the table. Lot size averaging shall be used in non-sloped areas suited for higher density development to provide larger lots in sloped areas and to try to achieve potential lot yield. Minimum lot sizes in sloped areas are to be consistent with the table except as provided in Step 2.

1. Less than 15% slope over 6 acres allowing full density credit of 4 dwellings/acre = 24 units.
2. 25% slope over 2 acres allowing density credit of 2.8 dwellings/acre = 5.6 units.
3. 35% slope over 2 acres allowing density credit of 1.8 dwellings/acre = 3.6 units.
4. 33.2 (33) total unit maximum.
5. Developer uses minimum lot size restrictions in the Table together with lot size

averaging to place maximum feasible lots in 0-15% sloped areas. Achieves full potential lot yield (33 units).

Step 2 - In cases where the Potential Lot Yield, i.e. 33 units, may not be achieved through the use of lot size averaging in Step 1, the developer may pursue smaller lots in steep sloped areas than those set forth in the Table. Subdivision designs incorporating such smaller lots shall be accompanied by a report as set forth in Section 2 above.

PASSED this 10 day of January, 1983.

SNOHOMISH COUNTY COUNCIL
Snohomish County, Washington

Cliff Bailey
Chairperson

Approved as to Form:

Deputy Prosecuting Attorney

ATTEST:

Ellie Snyder
Clerk of Council

- () APPROVED
- () VETOED
- () EMERGENCY

DATE: 1-12-83

Willis D. Tucker
County Executive

PUBLISHED 12-31-82 and 1-29-83

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Density On Steep Slopes - 8